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On a new Variable Star of Short Period. By J. E. Gore.

I have lately discovered that the star 10 (Flamsteed) *Sagittæ* is an interesting variable of short period. I first suspected variation in this star in October 1879, when I found it fainter than 11 *Sagittæ*, although it was rated one-third magnitude brighter by Heis. I did not pay much further attention to the star until October 1885, when I again began to observe it, and a few consecutive fine nights in November showed that the star was certainly variable, with a period of 8–9 days. My observations have been fully confirmed by the Rev. T. E. Espin and Mr. E. F. Sawyer. The variation is approximately from 5·6 mag. to 6·4 mag. in the scale of the *Durchmusterung*, and the period about 8½ days.

The following are all my observations to end of December 1885.

The comparison stars are:—

	Mag.	
11 Sagittæ	5·8	In *Durchmusterung.*
9 Sagittæ	6·6	
DM. + 16°, 4086	7·0	

Observations of 10 *Sagittæ.*

		h	m	Mag.
1876 Dec.	14			5·6
1879 Oct.	7			6·3
1882 Nov.	2			6·0
1884 Sept.	21			6·4
1885 Oct.	15			6·0
	31			5·7
Nov.	4	11	0	6·0
	9			5·7
	14	8	22	6·4
	14	10	55	6·4
	15	6	15	6·3
	15	10	15	6·3
	16	6	0	6·0
	16	10	35	5·9
	17	6	0	5·7
	18	6	10	5·8
	18	9	40	5·8
	21	5	53	6·1

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		h. m.	Mag.	Mag.
Nov.	28	8 0	5·9	5·6 Espin
	29	6 50	6·0	
	30	5 30	6·2	6·2 „
Dec.	1	5 50	6·4	6·4 „
	2	5 55	6·4	
	4	5 20	5·6	
	5	6 0	5·7	5·5 „
	7	5 50	5·9	6·1 „
	8	—	—	6·2 „
	9	7 30	6·35	6·4 „
	10	—	6·4	6·25 „
	11	—	—	6·0 „
	13	6 25	5·7	5·45 „
	14	—	—	5·6 „
	15	—	—	6·0 „
	16	5 50	6·0	
	16	7 25	6·1	
	16	8 25	6·1	
	17	—	—	6·4 „
	22	5 55	5·8	
	22	7 45	5·7	
	27	6 50	6·2	
	28	6 5	6·0	

Having plotted the observations in 1885 on square-ruled paper and drawn the light curve, I find the following dates of maxima and minima :—

Maxima.			Minima.		
1885	Oct.	31·3	1885	Nov.	14·3
	Nov.	9·3			23·1
		17·6		Dec.	1·9
	Dec.	3·8			10·0
		13·3			18·0
		22·3			

Treating the maxima by the method of least squares in the usual way, I find the following provisional elements :—

Period = 8·578 days
Mean epoch = 1885, Nov. 26·10
Variation 5·6 mag. to 6·4 mag.
Increase of light quicker than the decrease.

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The minima treated in the same way give the following:—

Period = 8·43 days
Mean epoch = 1885, Dec. 1·46.

On the New Star in Orion. By J. E. Gore.

I first saw this star with a binocular field-glass on December 13, 1885, at 9.20 P.M., Dublin mean time. My attention was attracted to it by its very reddish colour, and its absence from Harding's charts.

When first seen the star was slightly but *distinctly* brighter than χ^2 (57) *Orionis*—about 0·15 magnitude. It has since slowly diminished in brightness, and the following are my estimates of its magnitude, the comparison stars being

	Mag.
χ^2 Orionis	6·3
Lalande 11088	6·6
DM. 20°, 1156	7·2

Observations of Nova Orionis.

			Mag.	
1885	Dec.	13	6·15	Clear sky.
		14	6·4	Drifting clouds.
		16	6·3	Strong moonlight.
		22	6·6	” ”
		25	6·9	” ”
		27	6·9	Clear sky; no moon.
		28	7·0	” ”
1886	Jan.	6	7·3	
		13	7·5	
		16	7·7	

Continuous observation was prevented by cloudy weather.
